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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2230

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CONTENTS

BULGARIA

Broad Participation in International Fairs
(Kiril Antov; SOFIANEWS, 6 Jan 82) 1

Gas-, Oil-Pipe Works in Operation
(Georgi Vlassev; SOFIANEWS, 6 Jan 82) 2

New Electric Bus Developed
(Itsko Kohen; SOFIANEWS, 6 Jan 82) 3

Medicines to 70 Countries
(Zlatka Tsvetanova; SOFIANEWS, 6 Jan 82) 4

Six Million Tourists Visit Bulgaria in 1981
(Elena Noykova; SOFIANEWS, 6 Jan 82) 5

CZECHOSLOVAKIA

Minister Urges Higher Plant, Cattle Production
(Miroslav Toman; ZEMEDELSKE NOVINY, 6 Jan 82) 6

National Income, Labor Structures Discussed
(STATISTIKA, No 11, 1981) 10

Evaluation, Significance of Changes,
by Irina Pozdniakova
Sources, Distribution of Labor,
by Dyna Tesarova

CEMA Cooperation in Agriculture, Food Industry Outlined
(Antonin Cibulka; REVUE OBCHODU/PRUMYSLU/HOSPODARSTVI,
Nov 81) 35

Chemical Industry Results in 1981 Summarized
(Jiri Skladal; HOSPODARSKE NOVINY, 29 Dec 81) 41

BROAD PARTICIPATION IN INTERNATIONAL FAIRS

Sofia SOFIANEWS in English 6 Jan 82 p 2

[Article by Kiril Antov]

[Text]

Bulgaria maintains brisk trade with 116 countries. New products are added to her export list every year, the quality of goods is constantly improving, and their range is diversified.

This enables our country to participate in the most prestigious international fairs and exhibitions. Dozens of Bulgarian-made products have been awarded gold medals and other distinctions.

In 1982 our country will take part in the traditional international fairs in Leipzig, Budapest, Poznan, Milan, Zagreb, Salonica, Izmir, Vienna, Damascus, Baghdad and Teheran, plus at the fairs in Delhi and Maputo. In addition, separate Bulgarian foreign trade organisations will arrange independent exhibitions and specialised international shows in scores of countries.

The machine-building industry will exhibit new models of machine tools, wood-processing and textile machinery of high precision and greater productivity. The new types of semi-automatic and automatic lathes will be of particular interest to businessmen, specialists and manufacturers. Complete technological lines with full automation and mechanisation, industrial manipulators and robots with high technical ratings, will be put on show at many of these fairs.

Bulgaria is one of the world's largest manufacturers of material-handling equipment. Every fifth industrial car in the world is Bulgarian-made. We shall exhibit electric and engine-powered trucks with a lifting capacity of 500 to 5,000 kg, and electric hoists with a lifting capacity of 250 to 12,500 kg. They are convenient for handling goods in warehouses and outside of them.

Also on show at these fairs will be the latest computer, office and registration equipment which find ever wider application in various industrial sectors and daily life. Bulgaria has registered substantial achievements in these spheres in recent years.

The chemical industry will exhibit various types of fertilisers, dyes, lacquers, plastics, artificial fibres, light-weight chemicals, polymers and items of industrial microbiology. The glass, leather, furniture and food industries will feature the latest products. Visitors to the Bulgarian stands will find the textiles, the trendy ladies', men's and children's ready wear as well as pieces of furniture from wood quite interesting. They will be able to sample various products of the food industry such as dairy produce, tinned vegetables and meat, stewed fruit and jams, all of them well-known on the international market because of their high qualities.

The demonstration of this country's increased economic potential at international fairs and exhibitions in 1982 will contribute towards expanding and diversifying trade and economic contacts.

CSO: 2020/24

GAS-, OIL-PIPE WORKS IN OPERATION

Sofia SOFIANEWS in English 6 Jan 82 p 2

[Article by Georgi Vlassev]

[Text]

A works making pipes for oil and gas lines has been built in the town of Septemvri, Southern Bulgaria.

It now manufactures spirally welded steel pipes and in 1983 is expected to start the production of seamless ones. The welded pipes are made on two flowlines. One of them makes pipes of 426 to 530 mm in diametre and the other pipes of 530 to 1.220 mm in diametre. They come off in 13 standard diametres. This year the plant will be equipped with bushings so as to be able to turn out pipes of all intermediate diametres, including pipes to western standards.

As to the seamless pipes, they will come in a large variety, both as regards diametre and wall thicknesses which will range from three mm, suitable for the manufacture of syringes, to 88 mm, robust pipes used in gas and oil pipelines. The seamless pipes will be made from alloy and special steels.

What necessitated such production in Bulgaria? In the first place it was prompted by her own needs and the needs of her CMEA partners. After the construction of the oil pipeline linking the petrochemical works in Bourgas with the main district centres, intensive construction is going on of two semi-rings for the delivery of Soviet gas. The northern . semi-ring begins from the vicinity of Varna, reaches the chemical works in Vratsa and passes through the Kremikovtsi Iron and Steel Works and Sofia to reach the metal-producing plant near the town of Pernik and the cement plant at Temelkovo, South-Western Bulgaria. The southern semi-ring crosses the Balkan Range near the town of Karnobat, running towards Plovdiv. It is expected to reach Sofia by the end of 1985 where it will join the northern semi-ring. The supply of Sofia with central heating requires pipes still wider in diametre and so does the construction of the Silistra-Tolbukhin watermain which will ultimately solve the water supply problem of the Dobroudja plain.

Over the years Bulgaria manufactured only small-bore pipes to meet water-supply needs. All large-diametre pipes were imported from the Federal Republic of Germany, Italy and Japan. No longer. This country is gradually beginning to export pipes. It meets a small part of Soviet needs. Negotiations are under way for the export of pipes to Poland. We also export to Yugoslavia, Libya and Iraq. The plant in Septemvri which uses local raw materials is becoming an enterprise with a positive foreign trade balance.

The plant has reached and topped its design capacity and is now being expanded. No claims for poor-quality pipes have been put in.

A product of Bulgarian-Soviet cooperation, the plant was designed at GIPPROMES in Moscow. All its equipment are Soviet-made and every third worker has undergone training in the USSR.

The pipe plant boasts the biggest hydropress in the Balkans. A supersound device detects faults in the seams while the pipes are still on the rolling mill. The fault defector can regulate the seam, shift it and carry out a second check on a 15-cm stripe around it. The pipes have both external and internal seams. This increases their reliability.

Pipe production is fully automated. The big rolling mill is operated by nine people but there is a tendency to cut their number to five.

The town of Septemvri is to become a major pipe-producing centre in the coming years. This is a great achievement for Bulgaria and for the socialist economic community.

CSO: 2020/24

NEW ELECTRIC BUS DEVELOPED

Sofia SOFIANEWS in English 6 Jan 82 p 2

[Article by Eng. Itsko Kohen]

[Text]

The idea of manufacturing an electric car is not new. Now that the price of liquid fuels is rising, it has become particularly topical. Furthermore, internal combustion engines are the main culprits for environmental pollution. That is why the idea of a broader practical application of the electric car proved highly attractive. The costs involving its technical exploitation are three times lower.

In Bulgaria, too, work is going ahead on the design of such vehicles. Specialists from the Institute of Electric– and Engige-Powered Trucks have developed and manufactured the first Bulgarian electric bus. It is simple in design and has an attractive appearance. Its body is from fibre-class plastics and can carry 22 passengers.

It can run 60 kilometres on its own power (45 kilometres in city conditions) without recharging. When fully loaded the bus develops a speed of 35 kilometres per hour and is highly manoeuvrable.

Power comes from a special longer life battery. The battery produces 144 Volts for a 22 KW d.c. electric motor with 3,200 rpm. Despite its high power, the engine is small in size and weighs 80 kilograms. The battery can be recharged 1000 times.

The lighting, sound and signal installations are powered by another battery of 12 Volts. It can be charged from the main battery. This facilitates the maintenance and exploitation of the electric bus, as the functioning of all systems can be secured by charging the main batteries only. It takes only 15 to 20 minutes to charge the main batteries.up to 50 per cent of the energy consumed on the road.

Production is to begin soon of five types of this electric bus. One of them will serve tourists. It is an open-deck bus and a trailer can be attached to it. Its speed is lower at the expense of comfort. Another open-deck electric bus will be used for sports competitions and will develop a substantially greater speed. The bus is designed also to serve airport. with a platform which can be lifted to a height of three metres. In addition, the electric vehicle will be used for supplying the network of shops with goods, and for passengers in the centre of big cities where the traditional automobile is becoming more and more unwelcome.

CSO: 2020/24

MEDICINES TO 70 COUNTRIES

Sofia SOFIANEWS in English 6 Jan 82 p 2

[Article by Zlatka Tsvetanova]

[Text]

Within a comparatively brief period of time, Bulgaria has become an exporter of a large number of medicines vitamins, herbal extracts, essential oils, preparations for the food industry, veterinary and immuniobiological products. Bulgaria holds one of the first places in Europe in the production of Tetracycline and is runner-up in the world in the manufacture of Analgin (a pain killer). Our scientists have invented original preparations like Nivalin, Glauvent, Gastropharm, Normoflor, Cratemon and Voulnouzan, among others. During clinical tests and trials in Wiesbaden, in the Federal Republic of Germany, of all available anti-smoking preparations the Bulgarian *TABEX* was rated first.

Today Bulgarian-made medical preparations, perfumes and cosmetics are to be found in over 70 countries. Among them are the CMEA countries, as well as some developed capitalist countries like Austria, Great Britain, Spain, Italy, France, the Federal Republic of Germany, Holland and Switzerland.

The favourable soil and climatic conditions and the use of modern agricultural engineering make it possible to grow high-quality essential and oil crops which provide the basis of the perfumery industry. Apart from the traditional attar of roses this country likewise produces spruce, pine, dill and crane's bill essential oils. We should note that Bulgaria is a world leader in the production of lavender oil; its quality fully meets the strict requirements of the most prestigious perfume-makers. The Bulgaro-Micham oil of peppermint with its fine fragrance, refreshing taste and lack of bitterness is in great demand on the international market.

Our toothpaste *Pomorin* is made on the basis of the curative lye of the Pomorie lake, by the Black Sea, while we use mineral waters to produce the toothpaste *Meri*. These dental creams are known to possess curative and preventive qualities and are preferred in a number of countries. The new toothpastes like *Neo Pomorin*, *Fructo Pomorin*, *Phyto Pomorin*, *Zephyr* and *Lazur* have the same qualities as those of *Pomorin* and *Meri* but are more foamy and fragrant.

The new Bulgarian shampoos, perfumes and deodorants, produced to the latest requirements of modern cosmetics, are becoming more and more popular.

CSO: 2020/24

SIX MILLION TOURISTS VISIT BULGARIA IN 1981

Sofia SOFIANEWS in English 6 Jan 82 p 7

[Article by Elena Noykova]

[Text]

The thick fog over *Gatwick* airport was the reason for the delay of the charter flight from London to Plovdiv. Nevertheless, many people had come to welcome the plane. Aboard it was the six millionth foreign tourist to Bulgaria for 1981.

The television cameras shot the happy moment when the English schoolgirl Denise Saubolle, 15, and her friends Noel McCarthy and Aidan O'Connor crossed the "finishing line". The group of 150 English children who came through the *Schools Abroad* travel agency was the focus of attention. Denise, who could hardly suppose that she would make such a VIP traveller, answered journalists' questions with some confusion:

"I live in the town of Ilford, Essex county, and study in a school ten kilometres from London. I collect stamps, can swim, play tennis and am fond of singing songs of the *Madness* pop group. I have come here with my schoolmates for a six-day skiing course."

The group of English children was officially welcomed in front of the *Leningrad* hotel in Plovdiv. They were all given flowers, travel literature about Bulgaria and a folk orchestra played national dances. The six millionth tourist to Bulgaria Denise and the rest of the English children were greeted by officials of the State Committee of Tourism, Balkantourist, Balkan Airlines and the *Mladost* sports goods enterprise. They were given presents. Denise got a fur coat, a silver bracelet, skiing outfit, a jubilee album of Bulgaria, souvenirs, a free air ticket and a week-long vacation in Bulgarian mountain in 1982.

Aiden and Noel, both aged 13, were overjoyed at the heap of presents in front of them.

"So many presents just because we were in front and behind Denise in climbing down from the plane," they exclaimed.

The head of the group, Mr David Little took me to a child who followed the official ceremony just as excitedly. That was Catherine, Denise's 12-year-old sister.

"We were given many Christmas presents, but the Bulgarian Santa Claus proves more generous than the English one. I shall remember this trip all my life," she said.

CSO: 2020/24

MINISTER URGES HIGHER PLANT, CATTLE PRODUCTION

Prague ZEMEDELSKE NOVINY in Czech 6 Jan 82 pp 1, 5

/Article by Eng Miroslav Toman, CSc, minister of agriculture and food of the CSR: "At the Threshold of a New Year"/

/Text/ We have entered the first days of 1982. We have behind us the Christmas and New Year holidays which showed how our agricultural and food complex meets the basic directive of the 16th CPCZ Congress regarding optimum supply of the domestic market with food from our own agricultural production. It can be stated that in spite of some partial problems this task of high social responsibility has been met not only during the holdiays but for all of last year. A task rendered even more responsible by the fact that products of our sector represent roughly 50 percent of retail sales. Thus a well-supplied food market contributes to creation of a favorable political climate in our country. This fact has been positively acknowledged by the highest organs of the party and the government. I am availing myself of this occasion to express my thanks to all of our workers who with their efforts have contributed to providing food for the nation.

Exact balancing of the results and causes for failure to meet the plan for agricultural production in some phases will require a more detailed assessment. Yet the differences in the results achieved in production and economy by individual agricultural enterprises in the course of the year indicate that in addition to less favorable climatic conditions the overall results were also influenced by managerial and organizational efforts.

Last year proved to be less than favorable particularly for plant production as a whole. Good results were achieved in the production of potatoes, rape and hops, satisfactory was the production of forage from permanent grasslands and annual fodders from arable land. A smaller deficit (approximately 3-4 percent) occurred in the production of forage plants in conversion to hay, but their quality was relatively good.

The most harmful and detrimental lapse occurred in the production of grain. Production of cereals amounted to only 87 percent of the plan, in the case of legumes the harvest was even lower (56 percent of the plan). Frosts also considerably affected production of vegetables as a whole and particularly also production of fruit, where the harvest represents less than half of the plan quota. There is also a serious concern about the harvest of sugarbeet and with it the production of sugar.

I want to state openly that the causes of unsatisfactory results achieved in plant production in some agricultural enterprises and even whole districts were due, in addition to the already mentioned more adverse climatic conditions and lower level of managerial and organizational effort, to the varying level of agricultural equipment and technological discipline, whose consequences became reflected not only in yield per hectare, but also in quality of production and, ultimately, in economy.

It is imperative that we once again analyze at all levels of agricultural production management the reasons for attainment of not only good, but primarily the less satisfactory results in last year's plant production and draw specific conclusions for meeting the tasks of 1982 and the subsequent years of the Seventh Five-Year Plan.

In animal production, because of a lower harvest of cereals and other fodders, toward the end of the year we had to resort to regulatory measures in raising and fattening of pigs. I want to repeatedly emphasize what has already been said at the Fourth Plenum of the CPCZ Central Committee, that no agricultural enterprise can rely on additional allocations of grain fodders from state resources. Unified agricultural cooperatives and state farms must make do with what they themselves have produced. The time when agricultural enterprises with short supplies of grain fodder just stretched out their arm for a handout from the central resources has come to an end. The situation of the national economy, unusually sharp increases in the price of cereals, oil cakes, animal flours and raw materials on foreign markets force us to rely on our own resources, to become better managers in all respects. Every agricultural enterprise must be self-sufficient primarily as regards bulk fodders--as directed by the resolutions of the 13th Plenum of CPCZ Central Committee in 1979.

We are still far from utilizing all of our own possibilities and resources for increasing production. Where I see the greatest room for improvement is our continuing failure to balance the large differences in the production and economy of individual agricultural enterprises. This applies not only to the differing yields of cereals, which under identical production conditions often amount up to a metric ton per hectare, but the same holds true of root crops, bulk fodders and, particularly, animal production.

In 1981 we achieved in the CSR an annual yield from milch cows of approximately 3,090 liters of milk. That is less by approximately 30 liters than in the preceding year. There still are districts where yield from cows does not exceed 2,600-2,700 liters. With a little more attention and effort we could have met our milk procurement quota, because the deficit represents milk procurement for less than 2 days.

We wound up in a very complicated situation last year in production and procurement of pigs for slaughter, mainly because there were no desirable means for controlling the reproduction process and there occurred an excessive increase in pig herds. Our current task is to channel farm animal herds, and pigs in particular, in such a manner as to facilitate meeting of replenishment programs as well as quotas in production and procurement of animal products in this and in the next year. The developments encountered in the past 2 years must not recur. In particular, we cannot ignore the greatly differing results in regards to production and costs incurred by large-scale animal farms using industrial methods of work. They primarily reflect the work of managerial personnel of agricultural enterprises and agricultural administrations.

Results obtained by leading enterprises show that even in today's complex situation we are capable of creating the prerequisites for continued effective development of animal production. But this also calls for improved technical and technological discipline and resolute dealing with problems, primarily at district and agricultural enterprise level.

In the current year, all agricultural enterprises will find themselves in much harder conditions for meeting the plan for agricultural and food production. We cannot but make ends meet with fodders, but we must also manage all energy sources much better, particularly fuel oil. As of 1 January of the current year the Set of Measures for Improving the Planned Management System will also apply to agriculture. Managerial personnel are well aware of how many serious discussions were held in this context in regards to future planning of agricultural production and how at the same time provide for agricultural enterprises adequate margin for developing their own initiative without undermining at the same time the role of the plan. At this point, I would also like to state unequivocally that the new conditions for planning of agricultural production cannot and will not in any case mean for management personnel of agricultural enterprises any lessening of their burden. Even though the number of fixed indices is limited to a minimum, managerial personnel in unified agricultural cooperatives, state farms and particularly district and regional agricultural administrations must create in the plan itself the prerequisites for meeting quotas not only in production for which fixed indices have been stipulated, but that our fields and herds will produce for our society all the rest. The improved system and everything connected with it must not be interpreted as some sort of a one-time measure. It will be implemented gradually and I say openly that it will require much greater responsibility by every member of agricultural enterprise management. But also greater responsibility by agriculture's partners. After all, our common goal is production of quality foodstuffs not only in an adequate amount, but also at a low cost without adversely affecting the environment.

Some elements of the improve system are currently becoming reflected in production plans for the current year. What is our main concern? We must achieve balanced production in its entire assortment. We need grain, we need fodders, but we also need sugarbeet and potatoes, industrial produce, fruit and vegetables and other products. And these must be included in the plan of plant production. For that reason district agricultural administrations sometimes cannot but require management personnel of unified agricultural cooperatives and state farms to provide, in addition to production called for by fixed indices, also for production of other produce not forming a fixed part of planning. And not only in regards to volume. Provisions must be made for allocation of the requisite amount of acreage for the cultivated plants. This applies primarily to sugarbeet, where we cannot condone capricious or unrealistic planning of yields.

I would also like to direct my address to the processing industry and commercial outlets, not to rely, as has been the case, on raw materials to be procured for them merely by a set of numbers in a plan. Personnel of these organizations, as well as of organizations engaged in services, must go after the raw material themselves to a greater extent than has been the case. Cooperation must be promoted directly already at the production stage. This always used to be the case in the past, e.g., sugar producers did their best to obtain quality sugarbeet in adequate quantities for processing. This type of cooperation is practiced by linen manufacturers, starch factories, partially even by canning plants and others. New approaches to planning of agricultural production must become reflected in a much larger share of such cooperation. Only in this manner can processors create any guarantee for obtaining raw materials.

In animal production, this year should mark a faster turnover in what counts most, i.e., increased orientation toward development of horned cattle keeping, as emphasized by the resolutions of the 16th CPCZ Congress. We have not accomplished very much in this direction so far. It is a process drawn out over a number of years, nevertheless we cannot afford any more delays, as this creates a very tense situation in grain fodders when the major part of meat production is still obtained through fattening of pigs. It stands to reason that this ties in with production of bulk fodders. Last year we took the first few little steps, in that we obtained more hay, in some cases by haylage and silage. These forms of conservation utilizing solar energy must prevail in view of the limited possibilities we face in fuels and energy. Hot-air drying will be used primarily for obtaining indispensable components for fodder mixtures, but we will not be able to afford preserving in this manner less valuable fodders. Solving of the entire complex of fodder production and increased orientation on horned cattle raising will be reinforced also by the system of economic measures which will favor primarily this sector. Nevertheless, we cannot rely on better procurement prices for horned cattle and milk alone to straighten things out without taking appropriate organizational measures. Here the decisive role must be played by responsible organizational efforts of all managerial personnel.

In connection with the necessity for greater economy, particularly as regards fuel and other energy sources, agricultural plants will do well to assess their existing system of organization and management, as well as concentration of production. In the future, it will be necessary to select effective forms of operational management and production that would be least costly and would result in fuel savings.

Extraordinary effort will have to be developed toward improved utilization of every single area of acreage so that all of it, really all of it, even that part of it not permitting use of mechanized equipment, be properly cultivated and harvested. We do not want, and in no case shall we revert to, agricultural production on a small scale, but we cannot let the immense societal wealth of arable soil lie idle. In cooperation with local national committees we shall strive for all acreage unsuitable for large-scale production to be turned over for use by social organizations, citizens, even nonfarmers. Contractual fattening which we started practicing 2, 3 years ago indicates that also this form of initiative is bringing benefit to our society. And the possibilities for this form of production are still far from having been exhausted.

I did mention that our agricultural-food complex manages to keep the domestic market supplied with food at an acceptable level and without major fluctuations. I am aware that in spite of planned increases in the capacities of the processing industry, even this sector has many obsolescent capacities and tasks can be met only through large sacrifices by people. Last year--due to limited sources of raw materials--the food industry too experienced more difficult conditions.

Thus, as we enter the new year, I would like to thank all the people working in agriculture and in the food industry for their selfless performance, for their daily care to provide our common table with all the things we need for proper nourishment.

Thanks are also due to national committees, organizations of the National Front, personnel of sponsoring plants, supply sectors, soldiers, students and apprentices who last year helped with the harvest.

Let us all make a wish that this year's results in the agricultural-food complex turn out much better than they did last year.

8204
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NATIONAL INCOME, LABOR STRUCTURES DISCUSSED

Evaluation, Significance of Changes

Prague STATISTIKA in Czech No 11, 1981 pp 490-499

[Article by Irina Pozdn.akova: "Some Methods of Evaluation of Structural Changes and What They Reveal"; superscript Arabic numerals refer to appended Bibliography]

[Text] The problem of development and of structural changes in the national economy is very topical. Structural changes in the national economy are regarded as one of the factors in higher efficiency and intensification. Thus it is no accident that the theory of statistics has recently paid increasing attention to the elaboration of statistical methods for evaluation of structural changes and their causes. The purpose of this article is to summarize the present simple methods of evaluation of structures, to propose some other methods of evaluation and to suggest potential interpretation of methods proposed. Explications are based on a simple numerical example.

The methods of evaluation of the structure and their choice depend upon the questions which must be explained in the analysis of the structure and on the degree of accuracy and details of this explanation. Usually the start is made with elementary, but at the same time also more telling, methods and then more complex methods are employed which explain individual aspects of analysis of structures: their development, changes, causes of changes and so on. The absolute structure is given in advance, for example, the sectorial structure of identical territorial units in a longer time series or the structure of identical elements in several territorial units and so on. The first and initial step for further evaluation of these structures is their conversion to a comparable basis. The most popular is the method of share of individual components in the total which is regarded as 1 or 100 percent. For example (Table 1) we have the structure of ND [national income] during the last five-year plan at 1967 stable prices (in order to eliminate the effect of prices on the evaluation of structural changes). The share of individual sectors determines the place and weight of each sector in the production of the national income in every single year. For better illustration, graphic methods are frequently used in this stage--circular or bar graphs on the same scale for all years surveyed. Then the change in the whole area (length of the radius, height of the bar and so on in accordance with the scale indicated) can reflect the change in the total volume and the changes in the areas of individual components (or angle) reflect the changes in structures. This, however, is a rather elementary method, particularly if a small scale is used, and is suitable as a supplementary, illustrative method.

In case of time comparison of structures, it is expedient to determine the inter-annual growth rates for individual components and for the total (chain index) which can then be used for the evaluation of the effect of growth rates of individual components on the overall growth rate (Table 2). At this stage the graphic method of investigation is sometimes used, but if complex structures (a larger number of components) are involved, the results achieved by this method are less lucid. For this reason, either the components are aggregated or only the key components are depicted. A shortcoming of this method, if used apart, is the fact that it does not consider the weight of individual components. For this reason, a combination is sometimes used of bar graphs, which take the weight of components into account, and of the graph showing the development of these components. V. Kossov [3)] proposes another method of graphic evaluation of the effect of the development of structures.

This method separates the biggest component with the plurality weight (in our example the industrial sector) and depicts the dependence between the development of this biggest component and development of all other components in relations to the development of the total, in other words it suggests a graph in which, in his opinion, the angle between the axis "industry" and the diagonal indicates the relation between industry and the total, and the change in this angle of relationship (it is analogous to the so-called "cosine coefficient") because the length of the diagonal is proportionate to the total quantity. I regard this method as unnecessarily complicated because it does not reveal anything more than the coefficient (or percentage) of the share of selected component in the total, that is, in our case the percentage of industry in the production of national income.

The conversion of structures to the comparable (numerical or geometric) basis gives an answer to the question, whether the structural change occurred in time or space. In our example we can state that changes occurred in the weight and growth rates of individual sectors during the period surveyed.

The next step is to determine the magnitude of this change. The fundamental method of evaluation and the basis of further evaluation of changes in structures is the characteristic of the total change, that is

$$F^t = \sum_{i=1}^{n} \left| w_i^t - w_i^{t-1} \right| \qquad (1)$$

Table 1. Structure of CSSR national income

Sector	Production of national income by sectors (at comparable 1967 prices) in billion Kcs						Share of individual sectors in production of national income in % (w_i)					
	1970	1971	1972	1973	1974	1975	1970	1971	1972	1973	1974	1975
National income, total including	280.8	296.2	313.3	329.6	349.0	370.8	100.0	100.0	100.0	100.0	100.0	100.0
Industry	172.9	182.6	190.6	200.4	214.3	232.6	61.58	61.64	60.88	60.84	61.42	62.73
Construction	30.5	33.5	37.9	39.6	42.1	44.2	10.87	11.31	12.10	12.02	12.07	11.92
Agriculture	27.0	28.1	28.3	29.3	29.6	29.1	9.62	9.48	9.04	8.89	8.48	7.85
Forestry	3.6	3.7	3.8	3.7	3.6	3.8	1.29	1.25	1.21	1.12	1.03	1.02
Freight transportation	8.9	9.7	10.6	10.7	11.4	12.3	3.17	3.27	3.38	3.25	3.27	3.32
Production communications	1.2	1.4	1.3	1.4	1.5	1.6	0.43	0.47	0.42	0.43	0.43	0.43
Material & technical procurement	4.3	3.8	3.9	4.6	4.5	4.3	1.53	1.28	1.25	1.40	1.29	1.16
Trade and public catering	27.2	29.6	32.8	35.5	37.5	38.1	9.69	9.99	10.48	10.78	10.75	10.27
Purchase	1.7	0.6	0.6	0.6	0.6	0.7	0.61	0.20	0.19	0.18	0.17	0.19
Other sectors of material production	3.4	3.3	3.3	3.6	3.8	4.1	1.22	1.11	1.05	1.09	1.09	1.11

Source: Statistical yearbook

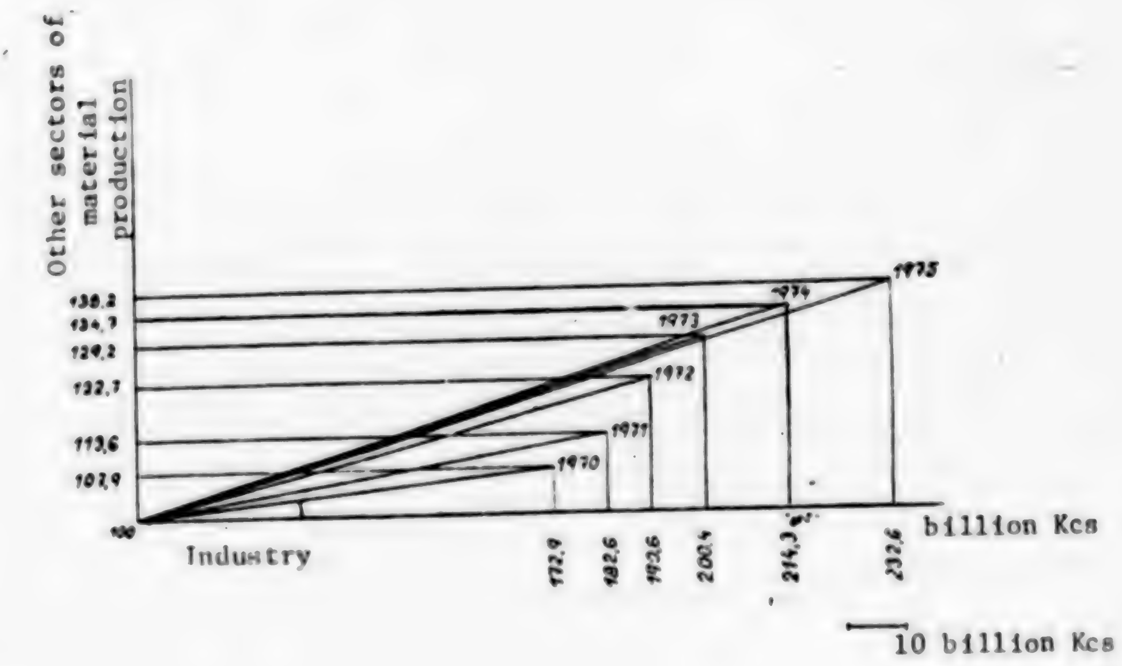
Table 2. Growth Rates of National Income (G_i) and Individual Sectors (g_i) Which Contribute to Production of National Income (according to data at 1967 comparable prices) in Relation to Previous Year = 100

in percent

	1971	1972	1973	1974	1975
National income	105.48	105.77	105.20	105.89	106.25
Industry	105.61	104.38	105.14	106.94	108.54
Construction	109.84	113.13	104.49	106.31	104.99
Agriculture	104.07	100.71	103.53	101.02	98.31
Forestry	102.78	102.70	97.37	97.30	105.56
Freight transportation	108.99	109.28	100.94	106.54	107.89
Production communications	116.67	92.86	107.69	107.14	106.67
Material & technical procurement	88.37	102.63	117.95	97.83	95.56
Trade & public catering	108.82	110.81	108.23	105.63	101.60
Purchase	35.29	100.00	100.00	100.00	116.67
Other sectors of material production	97.06	100.00	109.09	105.56	107.89

Source: Computed on basis of Table 1

Graph 1



(the total of absolute differences between the shares of individual components. The coefficient P^t determines how the weights of sectors change in the year "t" in comparison with the preceding year. This method of evaluation is used in all known sources. M. Butina[2] analyses the nature of coefficient P^t in the greatest details.

This characteristic fluctuates from 0 to 2, if the shares are expressed as a portion of 1, or from 0 to 200, if the shares are expressed in percentages to 100 percent. The closer this characteristic comes to the upper limit, the bigger changes occurred in the examined structure in time or space or the more two structures compared in space differ from each other[1].

In a similar way, if a longer period is involved, the average total change is determined, that is

$$\bar{P} = \frac{1}{T} \sum_{t=1}^{n} P^t \qquad (2)$$

or the structural change over the entire period, that is

$$S^t = \sum_{i=1}^{n} |w_i^t - w_i^0| \qquad (3)$$

Coefficients $\bar{P}$ and S^t likewise fluctuate from 0 to 2 or from 0 to 200.

The comparison of coefficients of changes between 2 years with the coefficients of average total change and of the change over the entire period makes it possible for us to draw conclusions on the nature of these changes. For example, if the coefficients P^t hardly differ from the coefficient P, then it can be stated that the weights of individual sectors did not essentially change during the period surveyed. However, if the coefficients P^t are bigger than S^t, it means that the changes in the structure were fluctuating. If the coefficient S^t is bigger than $\bar{P}$ and P^t, it means that the changes in the weight of individual sectors were of a more permanent nature in individual years and caused an overall major change in weights.

In our specific instance, the above three coefficients looked as follows (Table 3):

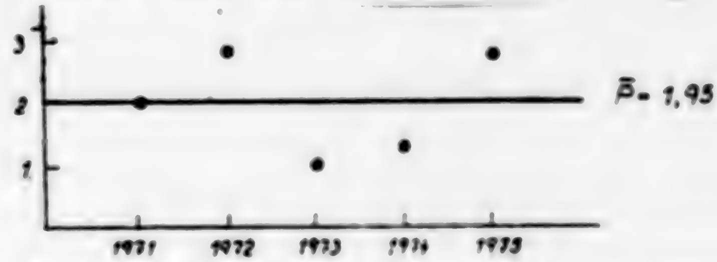
Table 3

In %

	P_i^t						
	1971	1972	1973	1974	1975	$\overline{P}$	S^t
National income total							
Industry	0.06	-0.76	-0.04	0.58	1.31	0.55	1.15
Construction	0.44	0.79	-0.08	0.05	-0.15	0.30	1.05
Agriculture	-0.14	-0.44	-0.15	-0.41	-0.63	0.35	-1.77
Forestry	-0.04	-0.04	-0.09	-0.09	-0.01	0.05	-0.27
Freight transportation	0.10	0.11	-0.13	0.02	0.05	[illegible]	0.15
Production communications	0.04	-0.05	0.01	0.00	0.00	[illegible]	[illegible]
Material and technical procurement	-0.25	-0.03	0.15	-0.11	-0.13	0.13	-0.37
Trade and public catering	0.30	0.49	0.30	-0.03	-0.48	0.32	0.58
Purchase	-0.41	-0.01	-0.01	-0.01	0.02	0.09	-0.42
Other sectors	-0.10	-0.06	0.04	0.00	0.02	0.04	-0.10
P_t	1.88	2.78	1.00	1.32	2.80	1.95	5.86

It may be stated that all structural changes were small, because they were within the 1-200 range. The values of coefficients P_i^t substantially differ from the values of coefficient $\overline{P}$ and fluctuate differently which indicates that the effects of individual sectors on the structural change differed. Graph 2 for example shows this for all sectors.

Graph 2



Coefficient S^t is three times as big as $\overline{P}$ and also bigger than any value of coefficient P^t which indicates that the changes in the weights of individual sectors were permanent during the 1970-1975 period. (Note: this reveals the very fact of change in the weights, but it does not tell, for example, that the weight of one group of sectors continuously increased in relation to the second group--for example, industry and construction in comparsion with other sectors.)

The initial relations (1) makes it possible to compute some additional characteristics of changes:

1. the characteristic of the overall increase in the share of sectors growing at a more rapid rate and also the characteristic of the overall reduction of the share of lagging sectors

$$k^t = \frac{1}{2} \sum_{i=1}^{n} |w_i^t - w_i^{t-1}| \qquad (4)$$

Then for the entire period surveyed

$$K(1,T) = \frac{1}{2} \sum_{i=1}^{n} |w_i^t - w_i^0| = \frac{1}{2} S^t$$

This characteristic is suggested by V. Kossov[3] [4] who states that coefficient K possesses the following properties:

a) if the structure changes monotonously, that is if the group of sectors which grow at a more rapid rate and the group of lagging sectors do not change, then the coefficient K for the entire period equals the total of coefficients k^t computed for every 2 years, that is,

$$K(1,T) = \sum_{t=1}^{T} k^t$$

b) if the share of at least one sector fluctuates during the period surveyed then

$$K(1,T) < \sum_{t=1}^{T} k^t$$

In our example (Table 4) K = 2.93 and $\sum k^t = 4.88$. The significance of this characteristic lies in the fact that it supplies the answer to the question whether or not the examined structure has developed monotonously ($2.93 < 4.88$, that is, that the weight of individual sectors fluctuated during the period surveyed). It can be assumed that the compliance with the first property is an exception rather than a rule.

After the conclusion that the structures did not develop monotonously, the question must be asked as to the degree of monotonousness. For such an instance, M. Butina[2] suggests the following procedure: from the total set of sectors those sectors are selected which did not change the direction of their development, that is sectors in which the ($w_i^t - w_i^{t-1}$) or ($w_i^{t-1} - w_i^0$) differences have the same sign and then the coefficient of the total structural change is computed for these sectors $C^t = \sum_{i \in I^*} |w_i^t - w_i^{t-1}|$, , where I* is the group of sectors with the unchanging direction of development. Furthermore, the coefficient of monotonousness of structural changes is determined

$$M^t = \frac{C^t}{P^t} \qquad (5)$$

Coefficient M^t acquires values from 0 to 1. If $M^t = 0$ then all sectors changed the direction of their development. If $M^t = 1$, then no sector changed the direction of its development, that is the development of the structure was monotonous. For a longer period he suggests computing of an average coefficient of monotonousness

$$\overline{M} = \frac{1}{T} \sum_{t=1}^{T} M^t \qquad (6)$$

In the evaluation of coefficient M^t it is necessary to compare its development with the development of coefficient P^t because coefficient P^t shows whether a structural change occurred in year ^{t}, while coefficient M^t indicates whether this change preserved its tendency or the tendency was upset.

c) the aggregation of sectors within the group does not affect coefficient k^t.

2. the characteristic of the average change between two structures[1)]

$$\bar{d} = \frac{P^t}{n} = \frac{\sum_{i=1}^{n} |w_i^t - w_i^{t-1}|}{n} \qquad (7)$$

Coefficient d "expresses how on the average every part of one group expressed by the relative number of structure differed from the analogous part in the second group" (Table 4)

Table 4

	1971	1972	1973	1974	1975	K	$\bar{M}$	$\bar{P}$
k^t	0,94	1,39	0,50	0,65	1,40	2,83		
P_t	1,88	2,78	1,00	1,30	2,80			1,95
C^t		1,97	0,59	0,51	2,63			
M^t		0,71	0,59	0,39	0,94		0,858	
$\bar{d}$	0,188	0,278	0,100	0,130	0,280			

This coefficient can be used not only for a separate characteristic of the structural change, but also for the determination of the sequence of sectors (division of sectors in relation to the average). This method proposed also by V. Abrahamova [1)] consists in the computation of the difference between the average value of the structural change and the value of structural change for each sector, that is

$$\bar{d} - (w_1{}^t - w_1{}^{t-1})$$

and then the order of sectors is determined from the biggest to the smallest value.

For better illustration, however, I suggest that the sequence be determined according to the absolute difference in changes in relation to the average change, that is

$$[({}_{I-i}{}^{t}m - {}_{i}{}^{t}m) - \underline{P}]$$

The change in the order characterizes the changes which occurred in the development of structures in relation to the average change (Table 5). In a similar way the comparison of coefficients P^t with $\bar{P}$ and also of $\bar{M}$ with M^t can be used for the evaluation of the development of interannual differences in relation to the average of changes during the entire period surveyed, particularly if a long period (of several five-year plans) is involved, when lucidity is lost.

These characteristics have uniform interpretation. Other characteristics of deviations from the average of changes which could be formally computed can be interpreted only with difficulty. Moreover, in the examination of the structure, when each component represents an aggregated quantity, it is questionable whether more complex characteristics of division should be used.

The last group of methods of evaluation of structures aims at the quantification of causes of established changes in the structure (this is not the quantification of real economic causes of changes in the structure, but the quantification of effects of some factors on the overall change, if this effect can be quantified at all).

The initial step in this analysis of the structure is the determination of the extent to which structural changes account for the total change in the volume. In this case the chain index of development of components of structure can be used, and the comprehensive index must be split into the index of permanent composition and the index of the structure:

$$I = \frac{\Sigma I_i}{n} . I_s$$

Symbol $\frac{\Sigma I_i}{n}$ represents the share in the change due to the increase in the average growth rate, symbol I_s represents the share in the change due to the fact that the structure change in favor of components with the growth rate exceeding the average growth. Computation for our example are listed in Table 6.

V. Kosov 3) suggests that the share of the structural increase be computed in the following way: first the components $\frac{\Sigma I_i}{n}$ a I_s. are added, then the share is computed in the conventional way, that is $\frac{I_s}{\frac{\Sigma I_i}{n} + I_s}$

and the coefficient is then compared either with coefficient k^t or $\bar{d}$ (Table 7)

Table 5

	$\frac{[\bar{d} - (w_i^t - w_i^{t-1})]}{\bar{\pi}}$					Order of sectors				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
Industry	0.681	3.734	1.4	3.462	3.678	8	1	6	2	1
Construction	1.340	1.842	1.8	0.615	1.536	5	3	5	10	4
Agriculture	1.745	2.583	2.5	4.154	3.250	3	2	1	1	2
Forestry	1.213	1.144	1.9	1.692	1.036	6	6	4	4	6
Freight transportation	0.468	0.604	2.3	0.846	0.821	10	10	2	9	10
Production communications	0.787	1.179	0.9	1.000	1.000	7	5	8	7–8	7
Material and technical procurement	2.329	1.108	0.5	1.846	1.464	2	7	10	3	5
Trade and public catering	0.596	0.763	2.0	1.231	2.714	9	9	3	5	3
Purchase	3.181	1.036	1.1	1.077	0.929	1	8	7	6	8–9
Other sectors	1.532	1.216	0.6	1.000	0.929	4	4	9	7–8	8–9

Table 6

1971/1970			1972/1971			1973/1972			1974/1973			1975/1974		
I	$\frac{\sum_{i=1}^{n} I_i}{n}$	I_s	I	$\frac{\sum_{i=1}^{n} I_i}{n}$	I_s	I	$\frac{\sum_{i=1}^{n} I_i}{n}$	I_s	I	$\frac{\sum_{i=1}^{n} I_i}{n}$	I_s	I	$\frac{\sum_{i=1}^{n} I_i}{n}$	I_s
105,48	97,75	107,91	105,77	103,85	102,05	105,20	105,44	99,77	105,89	103,43	102,38	108,25	105,37	100,84

Another possibility of the evaluation of the structural change is offered by the decomposition of the coefficient of the overall structural change P^t. M. Butina [2)] links the relation (1) to the growth rate of individual components of structure and of the total, that is

$$P^t = \sum_{i=1}^{n} w_i^{t-1} \left| \frac{g_i^t}{G^t} - 1 \right| = \frac{1}{|G^t|} \sum_{i=1} w_i^{t-1} \left| g_i^t - G^t \right| . \qquad (1a)$$

in which G^t is the growth rate of the total, and
g_i^t the growth rate of individual components.

If we use in our calculations according to the above formula for year t the growth rate for the year (t - 1), we obtain the coefficients of total structural changes from which the effect of changes in the growth rates between these 2 years have been eliminated.

This decomposition of coefficient P^t offers a graphic proof that the lower margin of P^t is 0. This will be so, if all growth rates g_i^t are identical.

Table 7

Indicator	1971	1972	1973	1974	1975
Share of structural increase in the growth rate of national income	52.47	49.61	48.62	49.74	48.90
k^t	0.94	1.39	0.50	0.65	1.40
$\overline{d}$	0.188	0.278	0.100	0.130	0.280
P_t	1.88	2.78	1.00	1.30	2.80
Structural change from which effects of changes in growth of individual sectors ($P_f t$) have been eliminated	1.61	2.88	1.01	1.29	2.74
M^t	--	0.71	0.59	0.39	0.94

Table 8

	$\frac{[(w_i^t - w_i^{t-1})]}{P_t}$					Order of sectors				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
Industry	3.191	27.338	4.000	44.615	46.788	8	2	7-8	1	1
Construction	23.404	28.417	8.000	3.846	5.357	1	1	6	5	4
Agriculture	7.447	15.827	15.000	31.538	22.500	5	4	2-3	2	2
Forestry	2.128	1.439	9.000	6.923	0.357	6-7	8	5	4	9
Freight transportation	5.319	3.957	13.000	1.538	1.786	9-10	5	4	7	6
Production communications	2.128	1.799	1.000	0.000	0.000	9-10	7	9-10	6	10
Material and technical procurement	13.298	1.079	15.000	8.462	4.643	4	9	2-3	9-10	5
Trade	15.957	17.626	30.000	2.308	17.143	3	3	1	3	3
Purchase	21.809	0.360	1.000	0.769	0.714	2	10	9-10	8	7-8
Other sectors	5.319	2.158	4.000	0.000	0.714	6-7	6	7-8	9-10	7-8

The data in Table 7 reveal that the sequence of years from the standpoint of structural changes which we can determine on the basis of coefficients k^t, d and P^t differs (though insignificantly only in the years 1972 and 1975) from the sequence according to the coefficients P_f^t and M^t. Then on the basis of comparison of data, for example, the following conclusions can be drawn. From the standpoint of the overall as well as average change in the structure, the smallest changes occurred in 1973 and the biggest in 1972 and 1975. However, the effect of change in the growth rates on the change in the structure was different in 1972 and 1975 which is confirmed also by the indicator M^t whose values point to an almost monotonous development in comparison with the preceding year. The comparison of coefficients P^t and P_f^t in 1972 indicates that the change in the growth rates of individual sectors resulted in something more than structural changes alone, therefore $P_f^t \quad P^t$. This conclusion is partly confirmed by indicator M^t which indicates a more monotonous development than in 1975. Such speculation would be probably even more substantiated if a longer time series were taken into account.

Finally, it is proper to evaluate the share of individual sectors in the total annual change in the structure P^t which is taken for 1 or for 100 percent, and determine the order of sectors by using the formula

$$\frac{[(w_i^t - w_i^{t-1})]}{P^t}$$

A similar evaluation can be carried out also in relation to the average indicators of the change in the structure.

All methods described here characterize the structural changes in terms of time. With some modification these methods can be employed also for the space comparison, but they will have to be interpreted differently.

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Sources, Distribution of Labor

Prague STATISTIKA in Czech No 11, 1981 pp 500-509

[Article by Dyna Tesarova: "CSSR Labor Force in the 1970's"]

[Text] Due to the continuous increase in the labor force in the national economy during the entire period of building socialism, the CSSR achieved full employment of men and a high degree of employment of women. The extensive utilization of all potential sources of labor, however, has almost depleted free reserves, particularly in regard to housewives. Moreover, the annual increases in the labor supply continuously declined in the course of the 1970's. The resolutions of the 15th and particularly of the 16th CPCZ Congress, therefore, paid great attention to the rational administration of the available labor force.

Trend in CSSR Labor Supply

During the Sixth Five-Year Plan, the statewide labor force increased by 223,000, or 2.4 percent, which was approximately one-third (96,000) less than in the previous five-year period. The increase slowed down in the main component of the labor supply, namely, in the number of inhabitants in the productive age (men 15-59 years of age, women 15-54 years of age). The increase of 180,000 during the 1976-1980 period represents only 54.0 percent of the increase attained during the previous five-year plan. During the Sixth Five-Year Plan, persons born in the years with a low birth rate at the beginning of the 1960's reached the productive age. In addition, the men born in the years with equally low birth rate during World War I reached the postproductive age together with the women born in the years with high birth rates following World War I*. In this connection, the structure of the increase in the labor force markedly changed not only by sex (while women accounted for almost 55 percent of this increase during the Fifth Five-Year Plan, it was men who accounted for more than 85 percent of the increase during the Sixth Five-Year Plan), but also be age. The main factor in the increase of the labor force continued to be the population increase in the productive age. In comparison with the previous five-year plan, however, the relative significance of this segment declined (it accounted for only 80 percent of the increase in the total labor supply, while during the Fifth Five-Year Plan, when there was an absolute decline of the number of workers of the postproductive age, the population of the productive age was the only factor in the increase of the labor force). The workers of the postproductive age accounted for approximately 20 percent of the increase in the labor force during the Sixth Five-Year Plan and in case of female workers, due to the absolute decrease in the number of women of productive age, they were the principal factor in the increase. The development of supplementary sources of labor, consisting of foreign subjects working in the CSSR, was of a different nature in the two five-year plans. Likewise, the number of states whose citizens temporarily work in the CSSR, further increased after 1975.

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* Moreover, the population data for 1980 reflect the effect of more precise preliminary results of the 1 November 1980 census.

By the end of 1980, the Czechoslovak national economy had at its disposal a labor force of 9,349,000, 47.8 percent of whom were women. In comparison with the Fifth Five-Year Plan, its distribution offers the following picture:

Table 1. Trend in labor force during the Fifth and Sixth Five-Year Plans

Sources of labor	Reality in thousands 31 December			Increase + Decrease - in thousands		Index	
	1970	1975	1980 1)	1971-1975	1976-1980	1975-1970	1980-1975
				Total			
Total	8,807	9,126	9,349	319	223	103.6	102.4
including:							
Population of productive age	8,166	8,499	8,679	333	180	104.1	102.1
Workers of postproductive age	625	610	655	-15	45	97.6	107.3
Foreign nationals working in the CSSR	16	18	16	2	-2	112.4	86.9
				Men			
Total	4,544	4,689	4,878	145	189	103.2	104.0
including:							
Population of productive age	4,263	4,375	4,569	112	194	102.6	104.4
Workers of postproducdive age	277	308	299	31	-9	111.3	97.1
Foreign nationals working in the CSSR	4	6	10	2	4	117.0	198.3
				Women			
Total	4,263	4,437	4,471	174	34	104.1	100.7
including:							
Population of productive age	3,903	4,124	4,110	221	-14	105.6	99.7
Workers of postproductive age	348	302	356	-46	54	86.7	117.8
Foreign nationals working in the CSSR	12	12	6	0	-6	110.6	41.0

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1) Preliminary data

During the Sixth Five-Year Plan, the economic utilization of the labor supply increased by 1.0 points and the share of some additional components of labor distribution also increased (during the Fifth Five-Year Plan--while the share of workers with only one or principal employment in the total labor force declined 0.7 points--a significant increase was registered, due to the measures promoting population growth enacted at the beginning of the 1970's, only in the number of women on maternity leave or extended maternity leave). As during the Fifth Five-Year Plan, a significant decrease occurred only in the share of other population of the productive age (including unplanned segments) and particularly of women.

Since many women of productive age who had not been gainfully employed before joined the labor force (at about the same rate during both five-year plans), the number of female workers increased 2.4 points, despite an insignificant absolute increase in the number of women on maternity leave and extended maternity leave, during the Sixth Five-Year Plan. By the end of the Sixth Five-Year Plan, the number of nongainfully employed women was 261,000 or 6.3 percent of women of productive age. A substantial proportion of them, however, could not join the labor force because they had to take care of children.

Changes in Economic Activity of CSSR Population

The economic activity of the population of both productive and postproductive age further increased during the last 5 years. Despite a larger number of women on maternity leave and extended maternity leave in the total number of women in the 15-54 age group (8.9 percent at the end of 1975 and 9.0 percent at the end of 1980 as compared to only 4.2 percent on 31 December 1970), the difference between economic activity of men and women of productive age was further reduced.

Employment in Czechoslovak National Economy

Despite the smaller increase in labor supply than during the previous five-year plan, however, employment in the CSSR national economy further increased during the 1976-1980 period--in fact more rapidly than during the previous five-year plan. The number of workers in the CSSR national economy reached 7,352,000 by the end of 1980 which was 306,000 (or 4.3 percent) more than in 1975. Employment increased 182,000 or 2.7 percent during the years of the Fifth Five-Year Plan.

The increase in employment during the Sixth Five-Year Plan, markedly exceeding the increase during the previous five-year plan as well as the plan estimates, was made possible particularly by:

--the more favorable structure of the labor force increase by sex. Men, whose economic activity exceeds 79 percent, accounted for more than 85 percent of the increase during the Sixth Five-Year Plan, while women, whose economic activity exceeds 70 percent, predominated in the increase in the labor force (almost 55 percent) during the Fifth Five-Year Plan;

Table 2. Distribution of CSSR labor force during Fifth and Sixth Five-Year Plans

Distribution of labor force	Reality (31 December) 1970	1975	1980 1)	Increase + Decrease - 1971-1975	1976-1980
			Total		
Workers with only one or principal employment (in 1000)	6,783	6,966	7,224	183	258
in percent	77.0	76.3	77.3	X	X
Women on maternity or extended maternity leave (in 1000)	163	366	371	203	5
in percent	1.9	4.0	3.9	X	X
Students of productive age (in 1000)	477	481	521	4	40
in percent	5.4	5.3	5.6	X	X
Apprentices of productive age (in 1000)	349	335	353	-14	18
in percent	4.0	3.7	3.8	X	X
Disabled of productive age (in 1000)	230	243	262	13	19
in percent	2.6	2.7	2.8	X	X
Other population of productive age (in 1000)	805	735	618	-70	-117
in percent	9.1	8.0	6.6	X	X
			Men		
Workers with only one or principal employment (in 1000)	3,686	3,797	3,926	111	129
in percent	81.1	81.0	80.5	X	X
Students of productive age (in 1000)	216	218	231	2	13
in percent	4.8	4.6	4.7	X	X
Apprentices of productive age (in 1000)	248	223	227	-25	4
in percent	5.4	4.7	4.7	X	X
Disabled of productive age (in 1000)	122	137	114	-8	23
in percent	2.7	2.5	2.8	X	X
Other population of productive age (in 1000)	272	337	357	65	20
in percent	6.0	7.2	7.3	X	X
			Women		
Workers with only one or principal employment (in 1000)	3,097	3,169	3,298	72	129
in percent	72.7	71.4	73.8	X	X
Women on maternity leave or extended maternity leave (in 1000)	163	366	371	203	5
in percent	3.8	8.3	8.3	X	X
Students of productive age (in 1000)	261	263	290	2	27
in percent	6.1	5.9	6.5	X	X
Apprentices of productive age (in 1000)	101	112	126	11	14
in percent	2.4	2.5	2.8	X	X
Disabled of productive age (in 1000)	108	129	125	21	- 4
in percent	2.5	2.9	2.8	X	X
Other population in prod. age (in 1000)	533	398	261	-135	-137
in percent	12.5	9.0	5.8	X	X

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1) Preliminary data

Table 3. Economic activity of CSSR population of productive and postproductive age

31 December	Productive Age Total	Men	Women	Postproductive Age Total	Men	Women
1970	75.2	80.0	70.1	21.8	27.0	19.0
1975	74.6	79.6	69.2	21.3	28.7	16.9
1980	75.5	79.2	71.5	22.7	30.4	18.7

-- the already mentioned increase in the number of workers of postproductive age (45,000 in comparison with 1975) which accounted for almost 15 percent of the total increase in the labor force during the Sixth Five-Year Plan. Women 55 years old and older accounted for approximately 36 percent of the increase in the number of gainfully employed women;

--the smaller increase in the number of women on maternity leave and extended maternity leave (their number increased 203,000 during the Fifth Five-Year Plan, but only 5,000 during the Sixth Five-Year Plan. The number of women on maternity leave and extended maternity leave has slowly decreased in recent years);

--the increase in the number of part-time employed, particularly in the sectors of the nonproduction sphere (their number increased by 48,000 which represented almost 16 percent of the total labor force increase during this period);

--a further increase in the number of housewives who became gainfully employed (by 137,000 during the 1976-1980 period, about the same number as during the previous five-year plan).

Table 4. Employment in CSSR national economy during the Fifth and Sixth Five-Year Plans

Indicator	Reality in thousand (31 December)			Increase (+) Decrease (-) in thousand		Index	
	1970	1975	1980	1971-1975	1976-1980	1975-1970	1980 1975
Total employment including:	6,864	7,046	7,352	182	306	102.7	104.3
workers with only one or principal employment	6,783	6,966	7,224	183	258	102.7	103.7
part-time workers	81	80	128	-1	48	98.7	159.9
Of the total employment in							
--production sphere	5,412	5,488	5,613	76	125	101.4	102.3
--nonproduction sphere	1,452	1,558	1,739	106	181	107.3	111.6
In addition, women on maternity leave or extended maternity leave	164	366	371	202	5	223.5	101.5

The growth rate of employment in the production sphere (index 102.3) was substantially lower than in the nonproduction sectors (index 111.6) during the 1976-1980 period. At the present time, the production sectors account for 76.3 percent of total employment (as compared with 77.9 percent at the end of 1975 and 78.8 percent at the end of 1970). The production sphere, however, claimed only 40.9 percent of the employment increase during the Sixth Five-Year Plan (as compared with 41.7 percent during the Fifth Five-Year Plan).

Among the production sectors, the biggest increase in the labor force was registered in industry (73,000), in domestic trade (59,000) and in construction (18,000). In comparison with the previous five-year plan, however, the increases were substantially smaller in these sectors. There was a smaller decrease in the agricultural labor force (56,000) after 1975 than in the previous five-year period, when the decrease amounted to 161,000. The labor force also decreased in forestry (4,000) during the 1976-1980 period.

Among the nonproduction sectors, the biggest increase in the number of workers was registered in education (45,000), culture (33,000) and health care (30,000). These sectors gained many more workers than during the previous five-year plan period. The more rapid increase in the labor force in the nonproduction sphere was closely related to the fact that the CSSR population's material needs were better satisfied: there were 114 workers in the nonproduction sphere per 1,000 inhabitants in 1980 (as compared with 101 in 1970 and 105 in 1975).

Employment of Women in CSSR

Women accounted for 48.2 percent of the increase in the labor force in the CSSR national economy during the Sixth Five-Year Plan, which was 7.4 points more than during the Fifth Five-Year Plan. Women accounted for the entire increase in the number of workers of postproductive age (the number of men of postproductive age declined absolutely). The number of women working in the CSSR national economy was 3,343,000 by the end of 1980 and was 147,000 (4.6 percent) higher than at the end of 1975. Their share in total employment, however, increased 0.1 points.

The percentage of gainfully employed women increased primarily in sectors of the nonproduction sphere during the 1976-1980 period. In the production sectors, on the other hand, their share in the total labor force decreased 0.5 points despite the insignificant increase in the absolute number of working women.

As to the labor force in respective sectors, women predominated in social welfare (86.7 percent), health care (78.5 percent), banking (77.0 percent), domestic trade (74.0 percent), education (72.0 percent) and some numerically smaller sectors. In industry which employed more than one-third of all working women at the end of 1980, women constituted 40.8 percent of the labor force.

Table 5. Employment in CSSR economy during the Fifth and Sixth Five-Year Plans by sectors (at the end of the year)

Sectors of national economy (so-called net sectors)	1970		1975		1980		Index	
	in 1000	Structure in %	in 1000	Structure in %	in 1000	Structure in %	1975-1970	1980-1975
Total employment	6,864	100.0	7,046	100.0	7,352	100.0	102.7	104.3
Material production sectors	5,412	78.8	5,488	77.9	5,613	76.3	101.4	102.3
including:								
Agriculture	1,156	16.8	995	14.1	939	12.8	86.1	94.3
Forestry	118	1.7	95	1.4	91	1.2	80.6	95.8
Industry	2,628	38.3	2,720	38.6	2,793	38.0	103.5	102.7
Construction	552	8.0	617	8.8	635	8.6	111.7	102.9
Transportation	216	3.1	216	3.1	224	3.0	100.0	103.6
Communications	49	0.7	51	0.7	53	0.7	104.8	103.2
Domestic trade	501	7.3	581	8.2	640	8.7	116.1	110.2
Nonproduction sectors	1,452	21.2	1,558	22.1	1,739	23.7	107.3	111.6
including:								
Transportation	151	2.2	149	2.1	159	2.2	98.5	106.8
Communications	49	0.7	51	0.7	53	0.7	104.8	103.2
Science, research and development	161	2.4	160	2.3	169	2.3	99.4	105.5
Housing	64	0.9	67	1.0	73	1.0	105.9	108.6
Community-run services	141	2.0	141	2.0	137	1.9	100.0	96.8
Education	328	4.8	359	5.1	404	5.5	109.7	112.5
Culture	78	1.1	83	1.2	116	1.6	106.2	140.0
Health care	229	3.3	269	3.8	299	4.1	117.4	111.3
Social welfare	26	0.4	32	0.5	41	0.6	125.3	126.7
Banking	24	0.3	24	0.3	25	0.3	104.5	99.8
Administration, judiciary, public prosecutors, arbitration	107	1.6	111	1.6	115	1.6	102.9	104.3
Mass organizations	34	0.5	33	0.5	40	0.5	95.7	121.4

Table 6. Employment of women in CSSR national economy during the Fifth and Sixth Five-Year Plans (at the end of the year)

Sectors of national economy (so-called net sectors)	1970		1975		1980		Index	
	in 1000	in % 1)	in 1000	in % 1)	in 1000	in % 1)	1975-1970	1980-1975
Total employment of women	3,122	45.5	3,196	45.4	3,343	45.5	102.4	104.6
Material production sectors	2,321	42.9	2,295	41.8	2,320	41.3	98.9	101.1
including:								
Agriculture	575	49.7	464	46.6	409	43.6	80.7	88.2
Forestry	34	29.0	24	25.4	22	23.9	70.7	90.0
Industry	1,112	42.3	1,122	41.3	1,138	40.8	101.0	101.4
Construction	68	12.3	79	12.9	87	13.7	116.8	110.1
Transportation	47	21.6	48	22.4	50	22.3	103.5	103.1
Communications	30	62.5	33	63.5	34	64.5	106.4	104.8
Domestic trade	369	73.7	429	73.8	474	74.0	116.3	110.5
Nonproduction sectors	801	55.2	901	57.9	1,023	58.8	112.5	113.5
including:								
Transportation	31	20.6	30	19.9	34	21.4	95.3	114.8
Communications	30	62.5	33	63.5	34	64.5	106.4	104.8
Science, research, development	54	33.4	56	35.2	62	36.6	104.6	109.8
Housing	31	48.4	32	47.4	33	45.2	103.7	103.4
Community-run services	72	50.9	73	51.6	75	54.4	101.4	102.2
Education	224	68.4	257	71.7	291	72.0	115.0	113.0
Culture	37	47.1	41	49.9	59	51.1	112.5	143.6
Health care	180	78.6	212	78.6	235	78.5	117.4	111.2
Social welfare	21	80.0	27	83.7	36	86.7	131.2	131.2
Banking	17	71.2	18	74.1	19	77.0	108.8	103.7
Administration, judiciary, public prosecutors, arbitration	55	51.3	59	53.8	66	57.3	108.0	111.1
Mass organizations	12	36.2	15	47.0	17	43.9	124.4	113.5

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1) of the total employment in the respective sector

An increase in the labor force during the Sixth Five-Year Plan took place particularly in the enterprises and organizations of the socialist sector of the national economy (excluding JZD [unified agricultural cooperatives])--it amounted to 362,000 or 5.8 percent (the number of workers in this sector increased 359,000 or 6.1 percent during the Fifth Five-Year Plan). By the end of 1980, there were 31,000 fewer workers in JZD than in 1975, while the number of workers in the private sector decreased 39,000 since 1975. Most of these workers--35,000--were individual farmers (a marked decrease in the number of individual farmers, however, took place during the Fifth Five-Year Plan--by 97,000 or 66.1 percent). Approximately 27,000 worked in the private sector by the end of 1980, that is only 0.4 percent of all workers in the Czechoslovak national economy (their share was 2.4 percent at the end of 1970).

Changes in Structure of Labor Force

Within the increase in the labor force of the socialist sector of the national economy (excluding JZD) during the 1976-1980 period, the most rapid increase was in the number of operators of equipment, maintenance workers and white-collar workers (particularly in the categories 9 and 8 of JKZ [uniform job classification] and a smaller increase in the number of blue-collar workers whose share in the total labor force decreased from 54.6 percent at the end of 1976 to 53.5 percent at the end of 1980. Numbers of blue-collar workers increased only in categories 2 and 3 of the JKZ.

The regulation of the number of workers in white-collar categories by the state plan and other measures aimed at the reduction of technical-economic and management and administrative apparatus according to the CSSR resolution No 312/1979 was positively reflected in 1980--after some favorable developmental tendencies manifested themselves as early as 1979--in the changes in the labor force structure. In contrast to the situation on 31 December 1979, there was an increase by the end of 1980 in the total number of workers in the socialist sector of the national economy (excluding JZD) by 55,000: 45,000 of whom were blue-collar workers, and by 15,000 operation and service personnel. On the other hand, the number of white-collar workers decreased by 5,000 (during the first years of the Sixth Five-Year Plan, the increase in the number of white-collar workers accounted for approximately 90 percent of the increase in employment in this sector).

Table 7. Trend in labor force of socialist sector of national economy (excluding JZD) according to job category (class)

Job category (class) according to JKZ 1)	31 December 1976 in 1,000	1976 Structure in %	1980 in 1,000	1980 Structure in %	Increase (+) Decrease (-) During 1977-1980 in 1,000	in %
Total labor force	6,298	100.0	6,593	100.0	295	4.7
including:						
Blue-collar workers (class 1-5A JKZ)	3,437	54.6	3,528	53.5	91	2.7
Class 1 of JKZ	259	4.1	242	3.7	-17	-6.6
Class 2 of JKZ	228	3.6	246	3.7	18	8.4
Class 3 of JKZ	1,636	26.0	1,728	26.2	92	5.6
Class 4 of JKZ	465	7.4	462	7.0	- 3	-0.7
Class 5A of JKZ	849	13.5	850	12.9	1	0.1
Operation and service personnel (Class 5B of JKZ)	859	13.6	949	14.4	90	10.4
White-collar workers (Cl.6-9 JKZ)	2,002	31.8	2,116	32.1	114	5.7
Class 6 of JKZ	650	10.3	675	10.3	25	5.0
Class 7 of JKZ	781	12.4	817	12.4	36	3.8
Class 8 of JKZ	521	8.3	569	8.6	48	9.0
Class 9 of JKZ	50	0.8	55	0.8	5	11.1

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1) Class 1--agricultural, forestry and fishery workers; Class 2--workers in mining and processing of raw materials in metallurgy, power sector and administration of water resources; Class 3--workers-processors (production, repair and maintenance workers); Class 4--construction workers; Class 5A--workers in transportation, services and auxiliary workers; Class 5B--operation and service personnel; Class 6--technical workers; Class 7--workers in the area of management and administration; Class 8--workers in education, culture, health care and other professional workers in the nonproduction sphere and Class 9--creative workers in science, research and development.

Reproduction of Labor Force in Czechoslovak National Economy

Considerable changes in the labor force of the Czechoslovak national economy took place during the Sixth Five-Year Plan. Approximately every seventh worker who was gainfully employed at the end of 1975 retired during the Sixth Five-Year Plan (in fact, every sixth worker did so during the Fifth Five-Year Plan). On the other hand, approximately every sixth worker who worked in the CSSR national economy at the end of 1980 joined the labor force after 1975 (every fifth worker during the Fifth Five-Year Plan).

Table 8. Reproduction of labor force in CSSR national economy during the Fifth and Sixth Five-Year Plans (in thousand)

Indicator	Total	Including Men	 Women
Number of workers in national economy as of 12 December 1970	6,864	3,742	3,122
Increases during Fifth Five-Year Plan	1,312	669	643
including: natural increase	1,125	603	522
Decrease during Fifth Five-Year Plan	1,130	561	569
including: natural decrease	851	478	373
Number of workers in national economy on 31 December 1975	7,046	3,850	3,196
Increases during Sixth Five-Year Plan	1,276	616	660
including: natural increase	1,043	555	488
Decreases during Sixth Five-Year Plan	970	457	513
including: natural decrease	900	415	485
Number of workers in national economy on 31 December 1980	7,352	4,009	3,343

The overwhelming majority of workers who retired during the 1976-1980 period did so because of old age, disability or death (92.8 percent) and only a small number for other reasons. During the period of the Fifth Five-Year Plan, the representation of natural increase was somewhat smaller (only 75.4 percent) because other decreases in this period were markedly affected by the fact that many women quit job because of motherhood.

The main source of the labor increase in the CSSR national economy during both five-year plans were young people who took their first job after finishing a school of all kinds or apprenticeship. These young people, 1,043,000 in number (46.8 percent of them were women), accounted for 81.7 percent of the total labor force increase during the Sixth Five-Year Plan (85.8 percent during the Fifth Five-Year Plan). More than 90 percent of them underwent, prior to their gainful employment, professional theoretical or practical training and completed higher than basic education. After 1975, the following numbers joined the labor force: 113,000 college graduates, 215,000 technical or vocational high school graduates, 35,000 gymnasium graduates and 531,000 graduates from apprentice schools and establishments.

The natural increase in the number of workers, that is, from the ranks of youth, was 143,000 higher than the natural decrease in the number of workers (due to retirement or death) during the 1976-1980 period. The difference between the natural increase and decrease was 244,000 during the Fifth Five-Year Plan. This means that approximately 86 percent of young people who took their first job during the period of the Sixth Five-Year Plan replaced those workers who ceased to be gainfully employed in the CSSR national economy due to old age or death (their proportion was lower and less than 76 percent during the preceding five-year plan).

Qualification Standard of Workers in CSSR

Due to a large number of graduates from schools and apprentice-training centers, the qualification structure of the labor force in the Czechoslovak national economy has continuously improved. Per 1,000 workers in the socialist sector of the national economy (excluding JZD), there are 257 experts with college or technical high school education (62 of them are college graduates and 148 graduates from technical high schools). The corresponding figures for 1970 were 216 experts, 45 college graduates and 118 workers with complete high school technical education. A negative phenomenon continues to be the fact that considerable numbers of workers with college education and particularly high school technical education work in jobs for which their qualification is not required and is, therefore, not fully utilized. In jobs for which training is required, there are 2,508,000 blue-collar and operation workers, 58.6 percent of whom have been trained in the field in which they work (trained blue-collar workers and operation workers constituted only 52.2 percent of workers in these jobs in 1971).

The shrinking sources of labor supply underscore the importance of rational utilization of the labor force. Despite the continuous increase in employment in almost all sectors of the national economy, however, no substantial progress was made in the solution of basic problems such as the continuously declining number of shifts worked in industrial enterprises, deteriorating utilization of working time in the principal sectors, rising tension between the sources of and need for labor, and so on.

The question of rational utilization of the available labor force will assume even greater importance during the period of the Seventh Five-Year Plan because in view of the anticipated lower increase in the number of persons of productive age as the main source of labor supply (the increase during the 1981-1985 period will be only one-third of the increase registered during the entire Sixth Five-Year Plan), the unfavorable trend in the development of labor supply will continue and intensify until 1985 and this will also affect the development of employment during this period.

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CEMA COOPERATION IN AGRICULTURE, FOOD INDUSTRY OUTLINED

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[Article by Eng Antonin Cibulka, Federal Ministry of Agriculture and Food: "The CSSR and Cooperation Among CEMA Countries in the Agriculture and Food Complex Sphere"]

> [Text] Adoption of the Comprehensive Program of Further Consolidation and Improvement of Cooperation and Development of Socialist Economic Integration Among CEMA Member States at the 25th meeting of CEMA in 1971 has been duly projected in continued development of cooperation in the area of agriculture and the food industry. As in other areas of cooperation, the agriculture and food complex was assigned specific tasks by this document directed not only at implementing new forms of cooperation which the socialist division of labor itself promotes, but also at attaining specific results in individual areas of the production process. Appropriate branch agencies of CEMA became the agencies responsible for developing multilateral cooperation according to the adopted principles of the Comprehensive Program, specifically the permanent CEMA commission for cooperation in the field of agriculture and the permanent CEMA commission for cooperation in the food industry area.

If we consider the results of cooperation in the area of agriculture and the food industry we find a number of specific projects which, shortly after approval of the Comprehensive Program, introduced both of the permanent commissions into their plans. It was logical to begin first with prognostic work which formed the basic condition for determining key initial data for the individual areas of cooperation. The results of jointly prepared prognoses indicated which hitherto unresolved problems could best be handled by international division of labor. Specific examples, for instance, are prognoses of the development of mechanization, electrification and automation of processes in plant and animal production, future developments in protein feed requirements and also future production developments in the meat, dairy, fat, canning, sugar refining, beer, wine and tobacco industries up to 1990. They prepared not only basic guidelines, particularly for implementing comprehensive mechanization, that is, the conditions for introducing complete engineering systems which would provide the required quality of work and enable meeting fixed agrotechnical deadlines, but at the same time would make up through increased productivity for the natural shortage of workers in agriculture and the food industry. Other favorable factors promoting development of large-scale production in agriculture and the food industry among CEMA member states could also be mentioned. We also must not overlook the fact that prognostic data were important leads for research and development workers in the area of mechanization of agricultural equipment and food-processing engineering who thus obtained basic parameters for the machinery and equipment essential for the comprehensive mechanization of agricultural processes and the automation of processes in the food industry while meeting requirements of quality and sanitation. For example, researchers in improvement made use of prognostic data in their work directed primarily toward new varieties of fodder crops with high protein content which would be suitable for harvesting mechanically. We could continue enumerating the results of joint prognostic work but it can be stated briefly that they played an important part in directing the future development of economic and scientific-technical cooperation. The Czechoslovak side took part energetically in all the work connected both with the methodology of prognosis and the preparation of long-term plans of development in agriculture and food but especially with their mutual integration and coordination within the whole socialist community. This process was especially important to Czechoslovak agriculture and its food industry from the viewpoint of internationalization of its long-term objectives and course of development as related to the long-term course of development of these important national economic branches in the other CEMA member states.

One of the basic goals of the Comprehensive Program is the transition from simply relaying experiences and exchanging goods to higher forms of cooperation, such as, coordinating plans, using contractual relations to increase the importance of the documents adopted as well as increasing responsibility for obligations taken. This was necessarily also projected into the activities of the permanent agricultural commission. Evidence of this are the multilateral agreements in the field of scientific-technical cooperation as well as in the field of specialization and cooperation.

Scientific-Technical Cooperation in Agriculture

Since adoption of the Comprehensive Program, several pressing tasks in this sector have been taken up, such as, the application of biology in plant and seed propagation, the struggle against parasites and diseases, also increasing soil fertility and efficient application of fertilizers, observing physiological principles of feeding farm animals, increasing efficiency in the use of feeds, etc.

From the viewpoint of subject matter according to the individual kinds of agricultural disciplines and individual kinds of agricultural crops, there are 18 problems, in most cases divided into themes. The overall plan in question contains about 57 projects.

With respect to forms of cooperation, seven problems are being handled by coordination centers established through multilateral agreements in the years 1971 to 1974. Certain coordination centers work on selected projects of their programs by means of temporary international collectives. Scientific-technical councils were set up for two of the problems.

Two of the seven coordination centers are in the CSSR, those for mathematical methods and computer technology and for mechanization, electrification and automation of production processes in plant and animal production.

The most concrete results are being achieved at the coordination center for improvement of grains and seed propagation in the USSR. Its cooperation has already had a number of practical results, such as, new varieties of grains, some of which are also being grown in the CSSR.

Scientific-Technical Cooperation in the Food Industry

To meet the needs of the food industry of CEMA member states, upon adoption of the Comprehensive Program two coordination centers were established on the basis of agreements in the sector for scientific-technical cooperation. These concern the problem of increasing the nutritive value of food and developing new, high-quality types of food (Sofia, 1972) and the problems of wrapping and packaging in the food industry (Warsaw, 1972).

Cooperation in these areas is focused on two basically quite distinct problems: research in the acquisition and use of protein and research in enzymes and their use. Research in protein involves comprehensive utilization of protein from milk and whey, the production of protein from soybeans, sunflower seeds, rape, cottonseed, etc. In the matter of enzymes, scientific-technical work is directed toward the production of protease, amylase and cellulose.

Czechoslovakia is involved in these projects, particularly in the research for technological procedures in the production of soybean concentrate which was completed at the beginning of 1979, in work on the production of rape protein, devising the technological procedures for the production of protein concentrates from the discharge water obtained during the production of potato starch and research in curdling casein and its properties. The results of this research were used in 1979 in designing a pilot link for the production of acidic casein which can be used for human consumption.

The problem of wrapping and packaging involves not only production of the actual wrapping materials and containers but also the packaging itself, including suitable packaging machines and the question of handling and transporting containers and wrapped foods. The scope of the problem is increased by the diversity of wrapping materials.

The participation of the CSSR is channeled largely toward development work with the aim of improving the technology of metal containers and closures and the packaging of prepared foods.

The results achieved from the work of this coordination center include, for instance, the introduction of over 20 modern wrapping materials, especially polypropylene sheets for wrapping dried and frozen products, contracting sheets and aluminum foil and initiating production of new kinds of sealing compounds and protective varnishes which made it possible to reduce the importation of these materials from nonsocialist countries.

Specific Results from the Operation of Branch Commissions

In the area of specialization, there is an agreement on multilateral international specialization in seed varieties, hybrids and plants of agricultural crops in which specific time limits and volumes of imports and exports are set. International tests of varieties necessarily precede mutual deliveries which have been conducted ever since 1961 and it may be stated that they brought very good results. For example, in 10 years there were introduced in the member states more than 350 varieties and hybrids of various agricultural crops. An assortment of seeds and plants was distributed in mutual deliveries with a 2-year specification and in volumes as given above and these are also the subject of cooperation within the framework of this agreement. Among the wheat varieties tested that were highly valued are Sadovo 1--BLR [Bulgarian People's Republic], Maitonbasari--MLR [Hungarian People's Republic], Turda--RSR [Romanian Socialist Republic], Petka--GDR, Iljicevka and Mironovska 808--USSR, Sava--SFRJ [Socialist Federal Republic of Yugoslavia] and Dvoran barley--CSSR, as well as others, clear proof of the results of the joint work organized by the agricultural commission.

In the area of animal production, there are multilateral agreements on specialization and making joint use of a black spotted livestock breed for milk as well as meat and also hogs and sheep. Also considered important is the agreement on international specialization and cooperation in production of veterinary preparations, which takes care of the needs of member states and assures smooth development of animal production.

Multilateral Agreements of Specialization

An important contribution toward providing technical maintenance and repair of the ever-more complicated mechanized facilities being introduced into agriculture is the multilateral agreement on international specialization and cooperation in the production of equipment for the repair and technical servicing of agricultural machinery. Recently it was expanded to include facilities and special equipment for testing machinery before putting it into agricultural operation. Another result of joint efforts of the CEMA member states is assistance toward uniform rating of the parameters of machinery and equipment, including requirements for job safety and sanitation, and is a concrete contribution toward rating mechanized devices which are to meet the requirements of the International Engineering System (MSS) which was also set up by the commission.

The agreement on multilateral international specialization and cooperation in protein casings falls within the activity of the food commission. The CSSR holds a leading position in this agreement as a specialized country since it supplies protein casings in the amount of almost 105 million meters annually to member states such as Bulgaria, Hungary, the GDR, Poland and the USSR. And it may be added that this obligation is being fully met.

These agreements, however, do not provide merely mutual exchanges; they also have a provision which imposes on the contractual parties, hence mainly the suppliers of the product, the obligation to subject their products to regular tests rating their quality. From the results they obtain not only very valuable information for further improvements but also important data for further research and development work.

The activity of both the commissions not only brings specific results to individual member countries in the area of multilateral cooperation but it may be said it also has considerable influence on bilateral cooperation. This is primarily because of the specific conditions of the agricultural-food complex in individual countries (for example, characteristics of soil and climatic conditions) but also the characteristics of food producers where certain types directly determine the development of cooperation on a bilateral basis. Among these, for example, in the area of agriculture, is the propagation of sugar beet seeds for the CSSR in Yugoslavia or Bulgaria, propagation of alfalfa seeds in the southern provinces of the USSR, also for the CSSR, the propagation of barley seeds in the CSSR for beer brewing for a number of states, etc. In these few examples it can be seen that cooperation in these areas, stemming from the Comprehensive Program, also produces sufficient scope for the specific development of cooperation among member states on a bilateral basis.

If we speak of the Comprehensive Program we must emphasize that the DCPS [Long-Term Goal-Oriented Program of Cooperation] is based on projects prescribed by the Comprehensive Program and in selected areas of cooperation it designates projects which, in view of the worldwide political, and particularly economic, situation, must be addressed on a priority basis. This means that it emphasizes intensifying the coordination of plans from the results of research to providing increased priority production with the objective of maximum satisfaction of the needs of member states and assuring adequate reserves.

From this general basis there emerges also the long-term goal-oriented program for further improving cooperation among CEMA member states in agriculture and the food industry. It fully conforms with Section XI of the Comprehensive Program, especially with Point 5 which sets the objective of maximum satisfaction of the population's food requirements.

Basic Objectives of the Long-Term Goal-Oriented Program

Cooperation in agriculture and the food industry makes a maximum contribution toward dealing with the task of meeting the needs of the inhabitants of the CEMA member states with basic kinds of provisions and the most important food products and also building necessary reserves. Reaching these goals will be achieved primarily through intensive development of each country's own production and also by expanding and intensifying international socialist division of labor and by the development of economic and scientific-technical cooperation among CEMA member states on the principles of mutual advantage. At the same time, each member country will make maximum use of its soil and climatic conditions in order to meet as fully as possible its own requirements of grain, feed, products of animal production and other basic agricultural products.

The most important directions of cooperation among member CEMA countries to meet their needs in basic kinds of foodstuffs are:

--to contribute to raising the production of meat (mainly from its own feed supplies), fish, vegetable oils and grain in every CEMA member country;

--to expand the production and export of sugar, fruit, including citrus, vegetables, potatoes and cotton from those countries that have suitable climatic conditions for it;

--to improve future varieties and hybrids for agricultural cultivation;

--to set up and put into operation modern technology for the production, harvesting and processing of agricultural products;

--to acquire through efficient joint action biological supplies from the world's oceans and zones designated as "open seas" and to thoroughly process these raw materials;

--to make joint use of the very best lines of basic breeds of farm animals and poultry and to develop new lines and breeds that are best for production on industrial type farms;

--to intensify and broaden all forms of economic and scientific-technical cooperation, specialization and collaboration in production, mutual exchanges of industrial fertilizers, chemical preparations, wrapping and other materials, machinery and equipment for the refrigeration industry, etc., including new capacities built through joint efforts of interested countries and the use of various forms and methods of economic stimulation to develop production of deficient agricultural products and increased mutual deliveries of food commodities.

Carrying Out Cooperation Measures

In the course of carrying out the measures contained in DCPS in the area of agriculture and the food industry, the CEMA member countries will be greatly helping to accelerate the development and increasing efficiency of agriculture and the food industries in Cuba and the MoLR [Mongolian People's Republic]. It is a matter of using forms of cooperation that apply to specific conditions in these two countries with the objective of aligning and adjusting the level of economic development of these countries with that of the other CEMA member countries and also raising export funds for deliveries of citrus fruits, sugar, meat and other products to interested CEMA member countries.

Implementation of the provisions for cooperation contained in the long-term goal-oriented program of cooperation among CEMA member countries in agriculture and the food industry will be carried out primarily through a system of multilateral and bilateral agreements drawn up on the basis of technoeconomic studies and project background data which will involve mutual obligations of the parties concerned.

The obligations of CEMA member countries contained in multilateral and bilateral agreements will be integrated into 5-year and long-term national plans consistent with their internal system of national economic planning.

The 10-year period for meeting the objectives prescribed in the Comprehensive Program was successful. It is, however, also logical that, especially in the area of the agricultural and food industry complex, problems should crop up and that several tasks have not yet been fully carried out. The essence of overall cooperation within the framework of the CEMA countries, however, requires that it be managed on the basis of internationalism and mutually beneficial cooperation among the countries of this community.

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CHEMICAL INDUSTRY RESULTS IN 1981 SUMMARIZED

Prague HOSPODARSKE NOVINY in Czech 29 Dec 81 p 2

/Article by Jiri Skladal, executive of the CPCZ Central Committee: "The Chemical Industry"/

/Text/ Numerous economic and other problems surfaced with the greatest urgency in our economy this year and the Czechoslovak chemical industry also had to carry out its tasks under rigorous external and internal conditions, particlarly as concerns foreign trade and the area of quality indicators which express economic efficiency. Certain other negative phenomena, such as shortages of essential raw materials (sulphur, carbon disulphide, phosphorites, cellulose, etc.), difficulties in the fulfillment of higher requirements in exports to the nonsocialist states, as well as problems in supplier-consumer relations helped confuse the overall situation even further. For that reason our chemical industry enterprises had to meet national economic needs by mobilizing their own internal resources and by raising their overall efficiency.

The results thus far have shown that the chemical industry under the auspices of the CSR Ministry of Industry carried out its assignments successfully. Over the past 11 months of this year it fulfilled 92.2 percent of its plan for the whole year, of which the Unichem and Chemopetrol was 92.4 percent and Czech Rubber and Plastic Works 91.7 percent, thus achieving an advantageous headstart in the amount of Kcs 465 million before the year's end.

Tasks in exports to socialist states were met just as successfully during the same period. The Czech chemical and rubber industries achieved 100.9 percent of their annual plan in wholesale prices and 103.8 percent in prices quoted as "all charges paid," which meant an edge of about Kcs 296 million in wholesale prices and Kcs 310 million in prices quoted as "all charges paid," which also substantially increased our export efficiency.

During the above-mentioned period, the tasks in exports to the nonsocialist states were also successfully met with 93 percent of the annual plan in wholesale prices and 93.9 percent in prices quoted as "all charges paid." Chemopetrol, with its 95.3 percent fulfillment in wholesale prices and 97.3 percent fulfillment in prices quoted as "all charges paid," has earned a major share in successful results of exports to the nonsocialist countries.

Deliveries to consumer goods inventory were fulfilled at 93.6 percent of the annual plan in wholesale prices and 91 percent in retail prices. In the adjusted value added indicator, 93.9 percent of the annual plan was fulfilled and the advantage thus gained amounted to about Kcs 361 million.

All VHJ /economic production units/ of the chemical and rubber industries in the CSR have successfully met their plan in terms of profits and returns on their production assets. Furthermore, the chemical and rubber industries as a whole as well as individual VHJ improved their fulfillment of the plan according to decades and months. As compared with last year, shortfalls caused by breakdowns and accidents were substantially reduced--by almost 50 percent. Despite such generally positive results, certain shortcomings remain in evidence, such as, for example, a relatively high share of unfulfilled operational plans for the production of selected goods where, for instance, Unichem failed to meet 31 percent, Chemopetrol 26 percent, and the Czech Rubber and Plastic Works 30 percent of their production of goods controlled by the CSR Ministry of Industry. It should be mentioned here that in some instances the causes were objective, such as socially determined cuts in consumption, limited resources of imported raw materials, etc.; however, cases resulting from the enterprises' own internal shortcomings, breakdowns, technological problems, inadequate organizational and managing work or insufficient control and discipline cannot be ignored.

Appreciation is due to the efforts of the workers in the Chemical Works in Litvinov and in the Moravian Chemical Works in Ostrava where ammonia production was exceeded, which mitigated the consequences of the accident in the Duslo enterprise in Sala, and reduced the shortfall in the production of fertilizers supplied by the CSR chemical industry.

Among similar positive phenomena is the gradually improving attention to the problems of consumption norms by means of their systematic upgrading wherever the development has been unfavorable or where the norms have failed to meet the standards of comparable manufacturers in the CSSR and abroad. The results of better utilization of raw materials became best evident, for example, in the olefin unit of Chemopetrol where the consumption of raw materials was reduced 16 percent since launching the trial run; it will be cut about 7.5 percent below the plan. The savings in the Unichem VHJ amounted to more than Kcs 80 million above the plan.

The positive achievements of the chemical and rubber industries in the CSR thus far prepared ground for a successful accomplishment of the tasks of the 1981 state plan by all the chemical and rubber industries as well as by individual VHJ, which provides the necessary preconditions for next year's progress as well.

A more complex situation in the fulfillment of the planned tasks developed in the chemical industry under the auspices of the SSR Ministry of Industry. Over the first 11 months of 1981 the SSR chemical industry fulfilled no more than 91.9 percent of its annual plan for production; Slovchemia scored 91.1 percent and Slovcepa 88 percent. The reasons may be found above all in the fact that many of the newly built production capacities failed to meet their projected parameters and moreover, that considerable losses were caused by breakdowns and accidents, the most serious of which was the disaster in the Duslo enterprise in Sala which considerably reduced our ammonia production and affected numerous related processes of production.

We do not regard as satisfactory the situation in the fulfillment of the sales plan where the most serious problem is the failure to fulfill the entire annual plan. In terms of sales structures, an appropriate share has been achieved only in deliveries for exports to the socialist countries where the chemical industry accomplished 100.5 percent of its annual tasks in wholesale prices and 96.6 percent in prices quoted as "all charges paid." Slovchemia achieved 100.5 percent in wholesale prices and 96.9 percent in prices quoted as "all charges paid," Slovcepa fulfilled 103.6 percent of its annual plan in wholesale prices and 104.1 percent in prices quoted as "all charges paid."

During the above-mentioned period, deliveries for exports to the nonsocialist countries have not been met to satisfaction. The chemical industry fulfilled its annual plan at 90.8 percent in wholesale prices and 92.2 percent in prices quoted as "all charges paid," the Slovchemia VHJ 90.8 percent in wholesale prices and 92.2 percent in prices quoted as "all charges paid," and the Slovcepa VHJ only 72.6 percent in wholesale prices and 61.1 percent in prices quoted as "all charges paid" for reasons stemming mainly from unfulfilled production programs, unsatisfactory quality of their products and unsecured payments of orders by foreign-trade organizations.

The SSR chemical industry successfully completed deliveries designated for consumer goods inventory.

The partial results presented above indicate that it will be quite difficult for the Slovak chemical industry to fulfill the tasks of the 1981 plan in certain indicators. Predictably, neither of the VHJ will fulfill its tasks in production and by the same token, it cannot be presumed that the adjusted value added indicator will be met. Slovcepa envisages that its exports to nonsocialist countries in prices quoted as "all charges paid" will not be met and in all probability Slovchemia will fail to meet its deliveries to consumer goods inventory in wholesale prices.

For the rest of the year the managers of chemical industries in both republics will be facing a number of demanding tasks, above all, various problems concerning more efficient utilization of primary and secondary raw materials, reducing power consumption in individual enterprises of production, and overall improvement in the use of energy. Meeting in the best possible way the stipulated deliveries for exports, particularly those to nonsocialist countries, and also for the fulfillment of deliveries for our domestic market, is an important task.

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